actively participating. Twenty-two hundred cases of injuries to fire fighters were successfully treated.

This service was rendered without cost to the individual treated or the governmental agencies in charge of the fire. Each doctor furnished his own transportation, medical equipment, and his time as his contribution to forest protection.

On another fire during the past season a medical officer of the corps was notified of an injury occurring on a mountain at around a 7000-foot elevation. He immediately borrowed a pair of heavy shoes, climbed the mountain and found a man with a broken spine.

Carrying the patient down the mountainside, the doctor placed him in a corps ambulance and sent him to the hospital, after giving him such treatment as was possible in the field.

The corps serves as a unit of the Conservation Department of the State Chamber of Commerce. It is headed by E. W. Murphy of Los Angeles, chairman of the statewide Conservation Committee.

Under Mr. Murphy's direction are a chief medical officer, an executive officer, six regional medical officers, fifty-eight county medical officers, and three hundred and ninety local medical officers and thirty liaison officers.

In addition to the above the corps has sixty-five registered nurses and thirteen ambulance units in its service.

Each medical officer is assigned to a specific district and signs an agreement to the effect that upon request of a forest officer he will proceed to the scene of a fire and give first-aid treatment to injured fire fighters, remaining on the job until properly relieved.

A dispatching system has been set up whereby in case of a major conflagration doctors are sent to all five camps and relieved when necessary.

A complete staff of liaison officers is maintained and during a major conflagration they patrol the region, making sure that the doctors are supplied with proper medicines and other necessary equipment. They also keep the county medical officer or his dispatcher informed of activities and needs in the field, arranging for relief doctors, etc.

The corps has one rescue unit of non-medical men who are trained in fire rescue work. The ambulance units are furnished to the corps for the most part by county hospitals equipped for this work.

The American Red Cross has fully coöperated with the corps, and where both organizations have been on duty at a fire has given splendid coöperation, working shoulder to shoulder with the medical officers.

During the winter months of low fire hazard, the medical officers conduct schools of first aid for forest officers. They also advise the forest officers as to the proper standardized equipment to be kept in their regular first-aid kits.

The corps is also available for duty in connection with any major public disaster, such as serious earthquakes.

The corps, in addition to being of great value on forest fire duty, has perhaps one of the greatest possibilities possessed by any individual group for educating the public concerning forest problems.

It would be difficult to estimate the number of people that would be reached through one forest fact imparted to a patient by a doctor, but if it went no further than the patient himself, the value of the corps in helping make the public more forest protection minded would be tremendous.

Membership in the corps has been limited to five hundred. To qualify for membership a doctor must be passed upon and receive the approval of the California Medical Association. This procedure assures the corps of a personnel composed of only doctors of high standing in the profession. Already other western forested states are planning to organize similar groups.

California can well be proud of this unique and original contribution to forest protection that is being given without thought of personal gain by the members of the medical profession.

MORTALITY FROM CERTAIN DISEASES AMONG CHILDREN UNDER FIFTEEN YEARS OF AGE IN CALIFORNIA 1906–1934*

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PART I

During the time that the California State Department of Public Health has been keeping statistics on deaths from the various communicable diseases, there have been reductions in rates among most of them.

As these communicable diseases affect children under the age of fifteen to a large extent, a special study of these reductions has been made by the Division of Vital Statistics, with interesting results. For these studies the period from birth to fifteen years of age has been divided into three groups: (1) under one year of age; (2) from one to four years of age; and (3) from five to fourteen years of age. The rates are based on the estimates of population for each age group, and the rates are computed per 100,000 population in each age group. The twenty-nine-year period studied has been divided into one four-year and five five-year periods for ease in computation. These periods are 1906-1909 (four years), 1910-1914, 1915-1919, 1920-1924, 1925-1929, and 1930-1934. A comparison of the rates in each five-year-period is given for each disease studied.

TYPHOID FEVER

Age group under 1. In the period 1906-1909 this group shows ten deaths, with a death rate of 6.8 per 100,000 estimated population. This rises to 7.4 in the five-year period 1910-1914, and then steadily declines until in 1930-1934 there is a death rate of 1.2 per 100,000 estimated population of this age group.

In age group 1-4, the death rate initially is much higher than in the age group under one year. This decreased in each subsequent five-year period, the greatest decrease coming between the second and third periods, until in 1930-1934 the death rate for this group is 0.9 deaths per 100,000 population of the age group. The actual number of deaths in this group falls from 102 during the first four years of the study to sixteen during the last five years.

The progress in the age group 5-14 years has been similar to that in age group 1-4, but not nearly so marked. Beginning with 246 deaths during the first four years, the number of deaths for the last five years of the study is reduced to eighty-five, with a corresponding reduction in death rates for the group from 18.6 per 100,000 population to 1.8 deaths from typhoid per 100,000 population.

Details of these changes are shown in the accompanying table.

Deaths from Typhoid Fever by Age Groups, California, 1906-1934

Years	Under 1 yr. Number	Under 1 yr. Rate	1-4 years Number	1-4 years Rate	5-14 years Number	5-14 years Rate
1906-1909	10	6.8	102	18.1	246	18.6
1910-1914	16	7.4	117	13.8	246	12.3
1915-1919	8	3.1	44	4.3	139	5.7
1920-1924	9	3.0	54	4.4	129	4.1
1925-1929	5	1.4	17	1.1	80	2.0
1930-1934	5	1.2	0.6	0.9	85	1.8

MALARIA

The occurrence of deaths from malaria, as from typhoid fever, has been greatly reduced in this State in all the age groups studied. Especially is this so in the age group under one, where it is reduced from a rate of 19.7 per 100,000 estimated children under one in the quadrennium 1906-1909 to 0.8 per 100,000 in the years 1930-1934. Numbers have been reduced from twenty-nine in the earlier period to three during the last five years studied.

A similar picture is presented by ages 1-4, where the rate has been reduced from 3.9 in the earlier years to zero in the last five years. Numbers fall from twenty-two in 1906-1909 to zero in 1930-1934.

The reduction in age group 5-14 has not been so marked; beginning with a total of twenty-one cases and a rate of 1.6 per 100,000 population of this age group in

* From the office of the Director, California State Department of Public Health.

Deaths from Malaria by Age Groups, California, 1906-1934

Years	Under 1 yr. Number	Under 1 yr. Rate	1-4 years Number	1-4 years Rate	5-14 years Number	5-14 years Rate
1906-1909	29	19.7	22	3.9	21	1.6
1910-1914	40	18.4	42	5.0	38	1.9
1915-1919	22	8.7	28	2.7	16	0.6
1920-1924	15	5.0	12	1.0	12	0.4
1925-1929	4	1.1	10	0.7	2	0.05
1930-1934	3	0.8	....	....	4	0.1

1906-1909, it rises slightly during the next five years to thirty-eight, or a rate of 1.9, and then falls rapidly to four deaths in 1930-1934, giving a rate of 0.1 per 100,000 estimated population. Details of these changes are shown in the above table.

SMALLPOX

This disease has never been responsible for many deaths in California, particularly among the younger age groups, and although we find a great deal of variation, in general, the rate has fallen somewhat. In the three age groups under study, the one comprising children under one shows the highest mortality rates. With seven deaths in the period 1906-1909 we find a death rate of 4.8 from smallpox. This falls to zero during the next five-year period, then rises to 5.0 and gradually recedes to 0.8 during the last five years.

In the age group 1-4 the rate is nearly uniform over the entire period preceding 1929, but in the last five years it falls to 0.1 from 1.0 per 100,000 group population, during the preceding five years.

In actual number of deaths there is a change from four during 1906-1909 to a maximum of fifteen during the five-year period of 1925-1929, falling to two during the last five years.

The death rates in the 5-14 age group are fairly uniform over the whole period, rising to a high point of 0.4 per 100,000 estimated group population with eleven deaths during 1920-1924, then falling to 0.1 with one death in the last five years of the study.

Smallpox, California, 1906-1934

Years	Under 1 yr. Number	Under 1 yr. Rate	1-4 years Number	1-4 years Rate	5-14 years Number	5-14 years Rate
1906-1909	7	4.8	4	0.7	....	....
1910-1914	....	....	6	0.7	4	0.2
1915-1919	2	0.8	7	0.7	5	0.2
1920-1924	15	5.0	11	0.9	11	0.4
1925-1929	15	4.3	15	1.0	9	0.2
1930-1934	3	0.8	2	0.1	1	0.1

SCARLET FEVER

The general tendency in mortality from scarlet fever has been downward throughout the period of study, although, like measles, there is a rise in number of deaths and rates in all three age groups studied during the period 1920-1924. The rates fluctuate somewhat in all these groups, but in general they show a downward tendency.

The age group under 1 shows a lower death rate than is shown by either of the older age groups. Beginning with fourteen deaths and a rate of 9.5 per 100,000 population the rates and numbers gradually fall during the next decade, but rise in the period 1920-1924 to eighteen, with a rate of 6.1 per 100,000 population of the group. During the next decade it reaches a low of five deaths from scarlet fever, with a rate of 1.2 per 100,000 group population.

The age group 1-4 has a higher death rate. Beginning with ninety-seven deaths from scarlet fever, a rate of 17.2, it rises to a high point of 162 deaths, with a corresponding rate of 19.2 per 100,000 group population in the next period. After a fall to a rate of 9.0 in 1915-1919, it again rises to a rate of 14.6 per 100,000 with a high point of 181 deaths. It then receded in the next two periods to a low of 5.3 per 100,000 group population.

The age for school children also shows a death rate somewhat higher than that for children under one year of age, but slightly lower than that for children one to four years of age. We find that at the beginning there are 137 deaths, giving a mortality rate of 10.4 per 100,000 population and this goes to 172, with a rate of 5.5 per 100,000 population in 1920-1925; dropping to 145 with a rate of 3.2 per 100,000 in 1930-1934.

Mortality from Scarlet Fever, 1906-1934

Years	Under 1 yr. Number	Under 1 yr. Rate	1-4 years Number	1-4 years Rate	5-14 years Number	5-14 years Rate
1906-1909	14	9.5	97	17.2	137	10.4
1910-1914	11	5.1	162	19.2	146	7.4
1915-1919	8	2.3	92	9.0	88	3.6
1920-1924	18	6.1	181	14.6	172	5.5
1925-1929	6	1.7	94	6.3	126	3.2
1930-1934	5	1.2	91	5.3	145	3.2

MEASLES

There have been fluctuations in deaths from measles within the different five-year periods, but in general there has been a typical tendency downward. Children under one year of age have the highest death rate from this cause, although those dying between the ages of one to four years contribute the greater number of deaths. The number of children under one year of age dying from measles has varied from 152 with a rate of 103.2 per 100,000 estimated population in that group in 1906-1909, through a peak of 190 deaths with a death rate of 64.0 in 1920-1924 to 122 in 1930-1934 with a corresponding rate of 30.5 deaths from measles per 100,000 children under one.

The number of deaths each period among children one to four years of age is higher than in age group under 1, but the rates are uniformly lower. Beginning with 287 deaths, 1906-1909, and a rate of 50.8, it falls, but rises again in 1920-1924 to 526 deaths with a rate of 42.4. The next five years the rate falls, but rises slightly during the last five years of the study to a rate of 20.8 per 100,000 group population corresponding to 359 deaths.

In the age group 5-14 the number of deaths and the rates fall markedly below those of the earlier age groups. These are the children of school age, and while there is probably a large incidence of cases of the disease, the mortality rate falls markedly. Rates are more nearly uniform for the whole period under observation, varying from 6.6, with 87 deaths during 1906-1909 to 142 deaths with a corresponding rate of 3.1 per 100,000 age group population in 1930-1934.

Mortality from Measles, 1906-1934

Years	Under 1 yr. Number	Under 1 yr. Rate	1-4 years Number	1-4 years Rate	5-14 years Number	5-14 years Rate
1906-1909	152	103.2	287	50.8	87	6.6
1910-1914	170	78.3	406	48.1	87	4.4
1915-1919	114	45.2	242	23.7	85	3.5
1920-1924	190	64.0	526	42.4	156	5.0
1925-1929	104	29.6	257	17.1	83	2.1
1930-1934	122	30.5	359	20.8	142	3.1

WHOOPING-COUGH

This disease at the present time is the most fatal of the communicable diseases among children under one year of age. The case fatality rate is high, and the death rate is higher than for scarlet fever, diphtheria, and tuberculosis among infants. Among the next age group, one to four years, it is still a major cause of death, but is exceeded by tuberculosis and diphtheria. In the age group 5-14, it has taken a very minor place among death-producing communicable diseases.

In 1906-1909, there were 380 deaths of infants under one year, giving the high rate of 258.1 deaths from whooping-cough per 100,000 population of that age.

The next five-year period shows a rise to 618 deaths, with a corresponding rate of 284.6 per 100,000 group population. We notice quite a rise in the number of deaths during the decade 1920-1929, but the mortality rate is somewhat lower than in the preceding five-year period. In the period 1930-1934 the number again falls, with a corresponding decrease in rates. Despite these decreases in death rates, whooping-cough has advanced from second place to first place among communicable diseases as a death-dealing among infants.

In the age group one to four, whooping-cough remains in third place among communicable diseases in all the period study, but falls from a high point of 51.5, with 435 deaths in 1909-1914 to 17.7 and a total of 305 deaths in 1930-1934. The largest number of deaths from this disease is in the period 1925-29, when 510 deaths from whooping-cough occur. The population of the group has increased enough, however, to keep the rate at 34.0 per 100,000 population.

(To be continued)